

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-11. (Cancelled)
12. (Previously Presented) A disposable diaper having a longitudinal axis, a first waist region, a second waist region, and a crotch region interposed therebetween, the disposable diaper comprising:
- a backsheet;
 - a permeable topsheet joined to the backsheet, the topsheet having an upper body-facing surface and a lower surface, wherein the permeable topsheet comprises two Z-folds parallel to the longitudinal axis;
 - an absorbent core disposed intermediate the backsheet and the topsheet; and
 - a plurality of temperature change elements disposed on the topsheet parallel to and spaced apart from the longitudinal axis, wherein the temperature change elements comprise permeable layers formed by the topsheet, impermeable layers formed by impermeable members disposed within the two Z-folds and interposed between the topsheet and the absorbent core, and a temperature change substance disposed on the topsheet, wherein urine deposited onto the temperature change elements can penetrate through the topsheet in a z direction to the impermeable members and wherein the impermeable members prevent urine from passing completely through the temperature change elements in the z direction and support the movement of urine in an x-y plane to wet the temperature change substance.

13. (Original) The disposable absorbent article as defined in Claim 12, wherein the temperature change substance is interposed between the topsheet and the impermeable members.
14. (Original) The disposable absorbent article as defined in Claim 12 wherein the impermeable members of the temperature change elements are elastically foreshortened.
15. (Cancelled)
16. (Previously Presented) The disposable absorbent article according to Claim 12, wherein the two Z-folds further comprise two elastic members disposed along outside edges of the two impermeable members.
17. (Currently Amended) A disposable diaper having a longitudinal axis, a first waist region, a second waist region, and a crotch region interposed therebetween, the disposable diaper comprising:
 - a backsheet;
 - a topsheet joined to the backsheet;
 - an absorbent core disposed intermediate the backsheet and the topsheet; and
 - a temperature change element disposed on the topsheet along the longitudinal axis, the temperature change element includes a permeable layer having a body facing surface, a temperature change substance having a negative heat of solution and responsive to contact with urine to absorb heat and being disposed on the permeable layer, and an impermeable layer partially wrapped around the permeable layer such that longitudinal edges of the impermeable layer stop short of meeting, leaving a center portion of the body facing surface of the permeable layer exposed.

18. (Original) The disposable diaper as defined in claim 17, wherein the temperature change substance is disposed on the body-facing surface of the permeable layer in parallel regions covered by the longitudinal edges of the impermeable layer.
19. (Currently Amended) A disposable diaper having a longitudinal axis, a first waist region, a second waist region, and a crotch region interposed therebetween, the disposable diaper comprising:
- a backsheet;
 - a topsheet joined to the backsheet;
 - an absorbent core disposed intermediate the backsheet and the topsheet; and
 - impermeable barrier leg cuffs disposed on the topsheet parallel to the longitudinal axis and
- temperature change elements disposed on the barrier leg cuffs, each of the temperature change elements includes a permeable layer having a body facing surface, an impermeable layer formed by the barrier leg cuff, and a temperature change substance having a negative heat of solution and responsive to contact with urine to absorb heat and being disposed on the permeable layer.
20. (Original) The disposable diaper as defined in claim 19, wherein the temperature change substance is disposed between the permeable layer and the barrier leg cuff.